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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,005	02/22/2007	Yukie Nakano	291240US0PCT	7628

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EXAMINER	
THOMAS, ERIC W	

ART UNIT	PAPER NUMBER
2831	

NOTIFICATION DATE	DELIVERY MODE
11/14/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/580,005	NAKANO ET AL.	
	Examiner	Art Unit	
	Eric Thomas	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 February 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-6, 8-11, 13-16, 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tokita et al. (US 2002/0137622).

Regarding claim 1, Tokita et al. disclose a multilayer ceramic capacitor comprises a dielectric body composed by alternately dielectric layers [0003]-[0004] and internal electrode layers [0004], and a pair of external electrodes are connected to the internal electrodes at the both ends of the layered dielectric body, wherein a tension stress in a direction of an electric field remains at an exposed face parallel to the direction of the electric field inside the layered dielectric body and the tension stress calculated by an X-ray diffraction measurement is a value not less than 50MPa. Although Tokita et al. do not expressly state that the tension stress in a direction of an electric field remains at an exposed face parallel to the direction of the electric field

inside the layered dielectric body and the tension stress calculated by an X-ray diffraction measurement is a value not less than 50MPa, it is understood to be an inherent feature. The multilayer ceramic capacitor of Tokita et al. is formed with the same materials and process as the present invention. When the structure recited in the references is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent.

Regarding claim 3, Tokita et al. disclose said dielectric layers contains a barium titanate (see example 8 table 6) as a main component, sintering aids, a first subcomponent, and a second subcomponent, said sintering aids including silicon oxide as a main component and CaO, the first a first sub-component includes a calcium oxide and the second subcomponent including Dy oxide.

Regarding claim 4, Tokita et al. disclose said dielectric layers further contain WO_3.

Regarding claim 5, Tokita et al. disclose said dielectric layers contain a MnO.

Regarding claim 6, Tokita et al. disclose a multilayer ceramic capacitor comprising a layered dielectric body composed by alternately arranging dielectric layers and internal electrode layers, and a pair of external electrodes are connecting to the internal electrodes alternately at the both ends of the layered dielectric body, wherein a compression stress in a direction connecting both the external electrodes remains at an exposed face parallel to the direction of the electric field inside the layered dielectric body and the compression stress calculated by an X-ray diffraction measurement is a value not less than 50 MPa. Although Tokita et al. do not expressly state that the

compression stress in a direction connecting both the external electrodes remains at an exposed face parallel to the direction of the electric field inside the layered dielectric body and the compression stress calculated by an X-ray diffraction measurement is a value not less than 50 MPa, it is understood to be an inherent feature. The multilayer ceramic capacitor of Tokita et al. is formed with the same materials as the present invention. When the structure recited in the references is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent.

Regarding claim 8, Tokita et al. disclose said dielectric layers contains a barium titanate (see example 8 table 6) as a main component, sintering aids, a first subcomponent, and a second subcomponent, said sintering aids including silicon oxide as a main component and CaO, the first a first sub-component includes a calcium oxide and the second subcomponent including Dy oxide.

Regarding claim 9, Tokita et al. disclose said dielectric layers further contain WO_3.

Regarding claim 10, Tokita et al. disclose said dielectric layers contain a MnO.

Regarding claim 11, Tokita et al. disclose a multilayer ceramic capacitor comprising a layered dielectric body composed of alternately arranging dielectric layers and internal electrode layers, and a pair of external electrodes are connecting to the internal electrodes are connecting to internal electrodes alternately at both ends of the layered dielectric body, wherein a compression stress in a direction connecting both the external electrodes remains at an outer surface perpendicular to electric field direction of the layered dielectric body and the compression stress calculated by an X-ray

diffraction measurement is a value not less than 100 MPa. Although Tokita et al. do not expressly state that a compression stress in a direction connecting both the external electrodes remains at an outer surface perpendicular to electric field direction of the layered dielectric body and the compression stress calculated by an X-ray diffraction measurement is a value not less than 100 MPa, it is understood to be an inherent feature. The multilayer ceramic capacitor of Tokita et al. is formed with the same materials and process as the present invention. When the structure recited in the references is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent.

Regarding claim 13, Tokita et al. disclose said dielectric layers contains a barium titanate (see example 8 table 6) as a main component, sintering aids, a first subcomponent, and a second subcomponent, said sintering aids including silicon oxide as a main component and CaO, the first a first sub-component includes a calcium oxide and the second subcomponent including Dy oxide.

Regarding claim 14, Tokita et al. disclose said dielectric layers further contain WO_3.

Regarding claim 15, Tokita et al. disclose said dielectric layers contain MnO.

4. Claims 16, 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (US 5,862,034).

Sato et al. disclose a multilayer ceramic capacitor comprises a layered dielectric body composed by alternately arranging dielectric layers (2) and internal electrode layers (3) and a pair of external electrodes (4) which are connected to the internal

electrodes alternately at the both end of the layered dielectric body wherein a stress remains at the outer surface of layered dielectric body in a direction of perpendicular to the electric field direction and the stress in a direction connecting both external electrodes satisfies the following equation: $LS = -Ln(n) \times B$ and $10 \leq B \leq 300$ (see col. 5 lines 10-25) in which n: number of dielectric layers (see col. 7 lines 55-60); B: constant of proportion (see col. 5 lines 10-25); LS: a value of the stress in a direction connecting to the both external electrodes at an outer surface of the layered dielectric body perpendicular to the direction of electric field therein calculated by an X-ray diffraction measurement; and Ln: natural logarithm.

Although Sato et al. do not expressly state that the multilayer capacitor wherein a stress remains at the outer surface of layered dielectric body in a direction perpendicular to the electric field direction and the stress in a direction connecting both external electrodes satisfies the following equation: $LS = -Ln(n) \times B$ and $10 \leq B \leq 300$ (see col. 5 lines 10-25) in which n: number of dielectric layers (see col. 7 lines 55-60); B: constant of proportion (see col. 5 lines 10-25); LS: a value of the stress in a direction connecting to the both external electrodes at an outer surface of the layered dielectric body perpendicular to the direction of electric field therein calculated by an X-ray diffraction measurement; and Ln: natural logarithm, it is understood to be an inherent feature. The multilayer ceramic capacitor of Sato et al. is formed with the same materials and process as the present invention. The capacitor has the same dimensions and number of dielectric layers as stated in the applicant's specification.

When the structure recited in the references is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent.

Regarding claim 18, Sato et al. disclose said dielectric layers contains a barium titanate (col 3 lines 10-25) as a main component, sintering aids, a first subcomponent, and a second subcomponent, said sintering aids including silicon oxide as a main component, BaO, and CaO, the first a first sub-component includes MgO and the second subcomponent including Y oxide (col 3 lines 10-25).

Regarding claim 19, Sato et al. disclose said dielectric layers further contain V_2O_5.

Regarding claim 20, Sato et al. disclose said dielectric layers contain a MnO.

5. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by JP 2003-309036 (‘036).

‘036 discloses a multilayer ceramic capacitor comprises a layered dielectric body composed by alternately dielectric layers and internal electrode layers and a pair of external electrodes are connecting to the internal electrodes alternately at the both end of the layered dielectric body, wherein the thickness of each of the dielectric layer sandwiched with two internal electrode layers is not more than 5 μm [0042] and the average grain size of dielectrics is not more than 0.6 μm [0053] the average grain size of conductive material in each of the internal electric layers being not larger than the average grain size of dielectrics and the layered number of the dielectric layers being not less than 50 [0053].

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 2, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tokita et al. (US 2002/0137622) in view of JP 2001-167631 (‘631).

Regarding claims 2, 7, and 12, Tokita et al. disclose the internal electrode is formed from a nickel material.

Tokita et al. dislcose the claim invention except for the nickel having an average particle size of raw material powder for the internal electrode layer is not more than 0.5 μm.

‘631 disclose an electrode paste for use in multilayer ceramic capacitor wherein the paste comprises nickel powder having a particle size of less than 0.5 μm [0035].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Tokita et al. using the electrode paste of '631, since such a modification would form a capacitor having electrodes with excellent electrical properties.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 5,862,034) in view of JP 2001-167631 ('631).

Sato et al. disclose the internal electrode is formed from a nickel material.

Sato et al. dislcose the claim invention except for the nickel having an average particle size of raw material powder for the internal electrode layer is not more than 0.5 μm.

'631 disclose an electrode paste for use in multilayer ceramic capacitor wherein the paste comprises nickel powder having a particle size of less than 0.5 μm [0035].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Sato et al. using the electrode paste of '631, since such a modification would form a capacitor having electrodes with excellent electrical properties.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 5:30 AM - 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Thomas/
Primary Examiner, Art Unit 2831